REMARKS

Claims 1-29 are pending with this paper. Claims 1-29 are rejected.

The Applicant is amending claims 1, 13, 21, 24, 25, and 29 in this paper.

The Applicant thanks the Examiner for considering the documents cited in the Information Disclosure Statement.

The Applicant acknowledges the acceptance of the drawings by the Examiner.

Typographical Errors

The Applicant has amended claim 13 to replace "." with "," to correct a typographical error.

The Applicant has amended claim 29 to replace "The method" with "A method".

Claim Rejections – 35 U.S.C. § 101

Claims 1-20, 21-23, 26-28, and 29 are rejected by the Office Action under 35 U.S.C. 101 because the claimed invention is allegedly directed to non-statutory subject matter. The Office Action alleges that "there is no physical transformation outside of the computer, and/or the claims are not limited to a practical application in the arts." The Office Action further alleges that the ultimate result is the creation of a source distribution function, an abstract idea and a purely mathematical algorithm." Regarding claim 1, the Applicant has amended the claim to include the feature of "(e) inverse transforming the filtered function to obtain the source distribution function and to form directly **a three-dimensional image representative of the source distribution**." (Emphasis added.) Claim 1 includes a "three-dimensional image representative of the source distribution" which provides a practical application in the arts. Moreover, "a three-dimensional image representative of the source distribution" is useful and

tangible and is thus not an abstract idea. Similarly, claim 21 includes the feature of "(e) inverse transforming the filtered function to obtain the source distribution function and to form directly the reconstructed three-dimensional image." Also, claim 29 includes the feature of "(e) inverse transforming the filtered function to obtain the source distribution function and to obtain directly a three-dimensional image that is representative of the source distribution, wherein the source distribution function corresponds to an image of the source distribution." Claims 2-20, 22-23, and 26-28 ultimately depend from independent claims 1, 21, and 29 and are thus directed to statutory material for the reasons discussed above. The Applicant requests reconsideration of claims 1-20, 21-23, 26-28, and 29.

Claim Rejections – 35 U.S.C. § 103

Claims 24-25 are rejected by the Office Action under U.S.C. 103(a) as allegedly being unpatentable over U.S. 5,861,627 (Basko) in view of "Reconstruction of Cone-Beam Projections from Compton Scattered Data" (Parra). Claims 24-25 depend from claim 21. The Applicant has amended claim 21 to include the feature of "(e) inverse transforming the filtered function to obtain the source distribution function and **to form directly a three-dimensional image representative of the source distribution.**" (Emphasis added.) The amendment is supported by the specification as originally filed. For example, Equation 52, Equation 60, Paragraph 84, and Paragraph 88 disclose directly forming a three-dimensional image. The Applicant has also amended claim 24 to replace ""reconstructed image" with "reconstructed three-dimensional image" and amended claim 25 to replace "a three-dimensional image" with "the three-dimensional image" because of the antecedent basis provided by claim 21.

The Office Action alleges that (referring to the feature of claim 21) "Regarding the: (e) inverse transforming the filtered function to obtain the source distribution function, Parra

discloses an alternative and/or improvement to the type of processing suggested by Basko wherein a three-dimensional source distribution function is established by reconstructing cone-beam projections from Compton data followed by deconvolution directly, or by an intermediate function (i.e., a spherical harmonics transform) followed by filtering and inverse transforming (page 1, col. 2, 2nd par.; page 5, col. 2, 1st par.)." Parra does disclose (Page 1, column 2, second paragraph. Emphasis added.):

> Analytic, rather than numeric solutions have also been proposed to solve the 3D source reconstruction problem [5, 6, 7]. In all instances, **the problem is separated into two steps.** First, cone-beam or plane projections of the source at different observation points within the detector volume are reconstructed from the measured data. **Then synthesis techniques from the field of Computed Tomography are applied to the resulting projections to generate the 3D source distribution.**

Parra further discloses (Page 1, column 2, third paragraph. Emphasis added.):

> In this paper we suggest a **similar two-step approach** to the 3D source reconstruction problem.

Parra does not teach or even suggest the feature of "inverse transforming the filtered function to obtain the source distribution function and **to form directly a three-dimensional image representative of the source distribution.**" (Emphasis added.) Rather, Parra requires two steps, in which tomography techniques are used to obtain the 3D source distribution in the second step. However, the claimed invention of claim 24 (which includes the features of claim 21) directly forms a three-dimensional image without necessitating the second step of Parra. The second step of Parra requires substantial additional processing and introduces additional error in reconstructing a three-dimensional image from the results of the first step. Basko does not make up for the deficiency of Parra. Thus, claims 24 and 25 are patentable over Basko in view of Parra.

Similarly, the Applicant has amended claim 1 to include the feature of "inverse transforming the filtered function to obtain the source distribution function and to form directly a three-dimensional image representative of the source distribution." The Applicant has also similarly amended claim 29 to include the feature of "inverse transforming the filtered function to obtain the source distribution function and to obtain directly a three-dimensional image that is representative of the source distribution, wherein the source distribution function corresponds to an image of the source distribution."

CONCLUSIONS

It is respectively submitted that the present application is in condition for allowance, and a Notice to that effect is earnestly solicited.

Respectfully submitted,

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